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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/755,330      | 01/05/2001  | J. Michael Weaver    | 0275D-000289        | 5073             |

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Harness, Dickey & Pierce, P.L.C.  
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EXAMINER

FLETCHER, MARLON T

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2837

DATE MAILED: 05/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |  |                     |  |
|------------------------------|------------------------|--|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> |  | <b>Applicant(s)</b> |  |
|                              | 09/755,330             |  | WEAVER ET AL.       |  |
|                              | <b>Examiner</b>        |  | <b>Art Unit</b>     |  |
|                              | Marlon T Fletcher      |  | 2837                |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 March 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-13 and 44-49 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-13 and 44-49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

1. The indicated allowability of claims 1, 3-13, and 44-49 are withdrawn in view of the newly discovered reference(s) to Herman et al. (5,907,205) and Shramo (4,933,581). Rejections based on the newly cited reference(s) follow.

#### ***Claim Objections***

2. Claims 46-49 are objected to because of the following informalities:  
Claims 46-49 depend from claim 40. Claim 40 has been cancelled.  
Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 7-13, are rejected under 35 U.S.C. 102(b) as being anticipated by Herman et al. (5,907,205).

As recited in claims 1 and 11, Herman et al. (5,907,205) discloses a brushless DC motor, comprising; a rotor assembly (22) including a rotatable shaft (24) having a permanent magnet affixed to the shaft; a plurality of coils (30) for producing a magnetic field for applying a torque to the rotor assembly (22), said coils (30) including

end turns that enclose the rotor assembly such that the rotor assembly is not removable (figures 4 and 5); a stator stack (32) made of a stator magnetic material for providing a magnetic flux return path as discussed in column 3, lines 38-50; a position sensor system (40) for sensing the positional relationship that the coils have with the permanent magnet (column 4, lines 45-65); and a controller coupled to the position sensor for controlling the application of a power source to the coils in response to the positional relationship of the coils and the permanent magnet (column 4, lines 45-65).

As recited in claim 7, Herman et al. discloses the DC motor, wherein the coils are layer wound as seen in figures 6 and 7B.

As recited in claims 8 and 12, Herman et al. disclose the DC motor, wherein the stator magnetic material is a laminated silicon steel as discussed in column 2, lines 50-57.

As recited in claims 9 and 13, Herman et al. disclose the DC motor, further comprising a position sensor system selected from the group comprised of: Hall effect sensors and leakage flux sensors as discussed in column 4, lines 57-65.

As recited in claim 10, Herman et al. discloses the DC motor, wherein the permanent magnet is magnetized after the plurality of coils are wound as discussed in column 4, lines 36-42.

3. Claims 44-49 are rejected under 35 U.S.C. 102(b) as being anticipated by Shramo (4,933,581).

Shramo (claim 44) discloses a brushless DC motor, comprising; a rotor assembly (figure 2) including a rotatable shaft (20) having a permanent magnet affixed to the shaft; an encapsulated stator defining an interface with the rotor assembly such that an air gap is formed, the stator comprising: a plurality of coils (15) for producing a magnetic field to apply a torque to the rotor assembly; a stator stack (27) made of a stator magnetic material for providing a magnetic flux return path; and a winding form that encircles the rotor assembly such that an air gap is maintained between the winding form and the rotor assembly, the winding form being configured to receive the plurality of coils (figures 2 and 3); a seal applied to the interface being adapted to seal the air gap such that the air gap is blocked off (column 2, lines 57-66); and an end bell affixed to the stator being adapted to support the rotor assembly such that the air gap is maintained (column 3, lines 31-43).

Shramo (claim 45) discloses the DC motor, wherein the winding form further includes a tube, a plurality of teeth, and an end plug, and the seal is adapted to contact the end plug and the end bell, thereby blocking off the air gap (figures 2 and 3).

As recited in claims 46 and 47, Shramo discloses the DC motor, wherein the seal is formed from a compliant material (figure 2; and discussed in column 3, lines 31-43); wherein said coils include end turns that enclose the rotor assembly such that the rotor assembly is not removable (figures 2 and 3).

As recited in claims 48 and 49, Shramo discloses the DC motor, wherein the coils are wound in a three phase winding configuration selected from the group of: Delta configuration and Wye configuration as discussed in column 4, lines 59-65.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herman et al. in view of Shramo.

Herman et al are discussed above. Herman et al. do not disclose a tube and a plurality of teeth.

However, with respect to claim 3, Shramo provides a winding form which further includes a tube, a plurality of teeth (figures 2 and 3).

As recited in claim 4, Shramo discloses the tube, end plug, and teeth are made from molded plastic (column 3, lines 31-36).

As recited in claims 5 and 6, Shramo discloses the DC motor, wherein the coils are wound in a three phase winding configuration selected from the group of: Delta configuration and Wye configuration as discussed in column 4, lines 59-65.

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the teachings of Shramo with the apparatus of Herman et al., because it provides another design for applying the coils over the coil form, which provides more power or magnetic flux over the coil form.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kech et al. (6,365,998).

### ***Response to Arguments***


7. Applicant's arguments with respect to claims 1, 3-13, and 44-49, have been considered but are moot in view of the new ground(s) of rejection.

The claims were presently indicated as allowable. The applicant cancelled all non-allowable claims. However, based on prior art sent by the applicant, the examiner has issued a new non-final office action. The after final amendment has been entered and the non-final action is based on the newly submitted claims. If applicant wishes to add those claims that were cancelled, the applicant may do so in response to this non-final office action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marlon T Fletcher whose telephone number is 571-272-2063. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on 571-272-2107.

  
Marlon T. Fletcher  
Primary Examiner  
Art Unit 2837

MTF  
May 11, 2004